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Relationship of safety climate perceptions and job satisfaction among employees in the construction industry: the moderating role of age

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This study examines the degree to which construction sector employees perceive that safety is important in their organizations/sites and how job satisfaction affects these perceptions when age is introduced as a moderator variable. Two-way analysis of variance demonstrated that job satisfaction has a strong effect on perceived management commitment to work safety and that this relationship was moderated by respondents' age. Job satisfaction was associated with perceived accident rate and safety inspection frequency, but the proposed role of age in this linkage was not confirmed. Consequently, the findings indicated that by increasing the level of job satisfaction, perceptions of these safety climate aspects proved to be more positive. The conclusion is that these relationships could further lead to a lower percentage of accidents and injuries in the workplace and better health among employees. A significant relationship between job satisfaction, age and perceived co-workers' commitment to work safety was not found.

Keywords: perceptions; safety climate; job satisfaction; construction industry; employees' age

1. Introduction

Traditional models of work safety have focused on the individual as a central factor in this area. Namely, accidents and injuries in the workplace are ascribed to unsafe behavior (taking risks in the presence of hazards, not using the needed equipment). For that reason, the engineering approach recommends putting hazard warnings or developing safeguards for hazards, while the motivational approach says that workers must be motivated to behave safely.[1] According to the personnel approach there are workers who are accident prone. Locus of control, emotional stability, stress and need for excitement are variables that have been linked to work accidents and injuries. However, strong empirical evidence for the proposed relations was not found.[2]

Hofmann et al. (1995, as cited in [1]) stressed that there is a broader spectrum of factors that contribute to work (un)safety. These factors operate on three levels in organizations: individual level (employee attitudes, behavior and knowledge), micro-organizational level (management attitudes, the presence of safety mechanisms and willingness of organizations to self-regulate work safety) and macro-organizational level (communication channels, technological complexity and worker specialization).

Neal et al. [3] suggested that safety climate is another important factor for safety at work. Safety climate is positively related to safety behavior. Workers with positive perceptions of safety climate are rarely involved in accidents and injuries.[4–7]

Accidents and fatal injuries in the construction sector are more frequent compared to other industries. For that reason, investigations of safety climate in this sector are very important. According to the Macedonian State Labor Inspectorate,[8] among 16 different sectors in the country, the construction industry is in second place in respect to occurred accidents (13%) during 2012. The most common cause of accidents at work was judged to be the irresponsible attitude of employers and management staff in enforcement of safety and health at work, i.e., inconsistent application of safety regulations, procedures and practices, insufficient training of employees, non-executed medical examinations to determine employees' health status and unsafe physical conditions. Fifty-four percent of all fatal injuries (deaths) occurred in the construction industry. They were caused by falls, contusion of construction vehicles and lack of safe work procedures. As was stated by the State Labor Inspectorate, employers and supervisors, and in rare cases, workers, have the greatest responsibility for this situation. This sector is characterized with highest rate (42%) of registered violations of health and safety regulations at work. As could be concluded, employees in the construction industry in the Republic of Macedonia are exposed to many hazardous conditions which are not controlled enough by organizations/employers. Safety-related

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policies and practices, e.g., compliance with safety standards, realization of safety training, are not fulfilled.

However, there is no empirical evidence of how the employees in the construction industry in the mentioned work context perceive safety and to what extent these perceptions are connected to job satisfaction as one of the most important work attitudes. Therefore, the aim of this study was to explore the degree to which construction sector employees perceive that safety is important in their organizations and how job satisfaction affects these perceptions when age is introduced as a moderator variable. It is expected that this research, conducted in the mentioned work context, will contribute to the enhancement of empirical facts about safety climate perceptions and its relation to job satisfaction, among younger and older employees.

1.1. Safety climate

Safety climate is defined as perceived procedures, policies and practices related to safety in the workplace.[6] More precisely, this construct refers to workers' perceptions of the priority of safety in their organizations. Zohar [9] emphasized that safety issues are competing with other issues in organizations, e.g., speed and profitability. For that reason, the perceived safety climate reflects *relative priority of work safety* over production goals.[9]

Some authors incorporate safety attitudes into safety climate notion (e.g., Mearns and Flin, 2001, as cited in [10]), but these two constructs are distinctive.[11] Safety climate differs from safety culture construct, too.[12]

DeJoy et al. [13] found that safety-related practices and environmental exposures are strong predictors of safety climate. In addition, safety climate is associated with psychological factors in the work environment, such as perceived organizational support,[14,15] organizational commitment (Tao et al., 1998, as cited in [16]) and job satisfaction.[17–20]

There is a disagreement among researchers regarding the number of safety climate dimensions. Zohar (1980, as cited in [7]) found eight factors of safety climate, e.g., management attitudes, work pace, status of safety officers, etc. whereas Dedobbeleer and Beland (1991, as cited in [7]) identified two dimensions of safety climate: management commitment to safety and worker involvement in safety behaviors. Hayes et al. [21] have incorporated five facets into their measure of safety climate: work safety, co-worker safety, supervisor safety, management safety practices and satisfaction with safety policies. Griffin and Neal's model has four dimensions: management values, safety inspections, personnel training and safety communication.[7] Based on the safety climate scale analysis, Flin et al. [22] found that there are three most examined themes of this construct, i.e., management, safety system and risk. As cited in DeJoy et al.'s study,[13] many authors agree that the main aspects of safety climate are management support to safety and the overall importance prescribed to safety in the organization.

Taking into consideration the mentioned models, as well as the characteristics of the construction sector in the Republic of Macedonia, in this study we focus on three aspects of safety climate: management commitment to safety in the workplace, perceived accident rate and safety inspections, and co-workers' commitment to safety in the workplace.

1.2. Job satisfaction

According to Locke (1976, as cited in [23]), job satisfaction is a positive emotional state which results from the appraisal of one's job or job experiences. For Cranny et al. (1992, as cited in [24]), job satisfaction is the affective reaction to a job that results from a worker's comparison of actual outcomes with desired outcomes. In summary, job satisfaction represents employees' attitudes toward work [25] or the extent to which they like their work (Spector, 2000, as cited in [24]).

It is well documented that job satisfaction is positively related to organizational commitment, work attendance, life satisfaction, psychological health and perceived organizational support. For example, a strong relationship between job satisfaction and perceived organizational climate was found in a study conducted in various work organizations in the Republic of Macedonia.[26] Accordingly, it might be proposed that job satisfaction, as positive attitude toward work, reflects employees' perceptions of different workplace aspects, including safety climate and its prioritization within the organization. More precisely, it could be expected that employees who are involved in and satisfied with their work, perceive safety as highly prioritized by management staff, organizations and co-workers. Consequently, they will behave more safely (i.e., there will be less accidents and injuries in the workplace).

1.3. Age

Younger workers are more prone to accidents at work, but older workers are more likely to have serious injuries.[27] Fewer accidents among older workers are explained by their job-related experience and number of years in industry,[28] while higher vulnerability to injuries contributes to slower reaction time, decreased mobility, reduced elasticity of tissues and loss of strength (Lochart et al., 2005, as cited in [29]). It was reported that older workers in the chemical industry behave more safely and have more positive safety attitudes compared to their younger counterparts.[30] More positive safety attitudes were also noted among older construction workers in China.[31] On the other hand, Pecquet [32] found that

age is not connected to safety behavior among construction workers, whereas Živković [33] reported that younger and older workers in the chemical industry do not differ in motivation for occupational safety. Empirical results suggest that older workers are more satisfied with their job in comparison to their younger colleagues.[28,34]

In the context of the construction sector in the Republic of Macedonia, where the accident rate is high and there are many complaints about worksite safety, it could not be expected that older employees would perceive safety as more important within their organizations, or that they would have higher job satisfaction, than younger employees.

However, there is the rationale to postulate that age will moderate the relationship between job satisfaction and safety climate perceptions. Due to the older employees' job experience, longer tenure, watchfulness and lower tendency for risky actions, when job satisfaction is low, it is expected that their interpretation of safety issues will be positive.

Therefore, the following research question was defined: *Do younger and older employees in the construction industry with various level of job satisfaction differ in perceptions of safety climate at work?*

According to the above considerations, the formulated hypothesis was:

> H_1: Younger employees who are dissatisfied and younger employees who are partially satisfied with job will have negative perceptions of safety climate, i.e., (a) management commitment to work safety, (b) accident rate and safety inspection frequency, and (c) co-workers' commitment to work safety compared to older employees who are dissatisfied and older employees who are partially satisfied with their job.

2. Method

2.1. Sample and procedure

The sample consisted of 155 employees in eight construction firms/sites in the Republic of Macedonia. One hundred and twenty-three of them were male, while 32 were female. Skilled workers composed 56.8%, engineers composed 21.9% and 21.3% were in other job positions in the firms (economists, secretaries, drivers). Eighteen respondents (11.6%) reported that they have basic education, 57.4% reported secondary education and 31% had completed university education. Twenty percent of the participants had $\leq$5 years of tenure, 16.8% had 6–10 years of tenure and 63.2% reported that they had been employed for >10 years.

The data were collected in March 2013 during work breaks. It was explained that participation is voluntary, that responses would be confidential and only used for research purposes. The questionnaire took 10–15 min to fill in.

2.2. Measures

Safety climate was measured with 12 statements assessed on a 5-point Likert scale ranging from 1 = *not at all agree* to 5 = *completely agree*. Items were developed by the authors of the study and organized in three separate subscales.

Management commitment to work safety subscale consisted of five items (e.g., *Management provides all necessary safety equipment for employees*). This scale described the extent to which management was perceived to be committed to/take care for work safety. The reliability coefficient was $\alpha = 0.87$.

Perceived accident rate and safety inspections subscale with five items was used to measure the extent to which employees perceived work conditions in the construction sector as safe, as well as perceived level of application of mechanisms and controls by organizations (e.g., *Inspections of safety and health conditions in the workplace are frequent*). Cronbach's α of this subscale was 0.77.

Co-workers' commitment to work safety subscale consisted of two items (e.g., *Some workers do not use safety equipment even if they take risky actions during their work*). This subscale represents employees' perception of their co-workers' engagement in unsafe behavior during the completion of work tasks. The reliability coefficient of this subscale was $\alpha = 0.78$.

A higher score on each subscale denotes higher extent of perceived safety climate dimensions.

Principal component analysis with varimax rotation method was applied to explore the theoretical organization of the items into these three subscales. The Kaiser–Meyer–Olkin (KMO) measure was 0.85 indicating that the data were appropriate for this analysis. Bartlett's test of sphericity was significant ($\chi^2 = 873.87$, $p = 0.000$) which showed that there is a correlation among safety climate subscales. The results revealed that three factors with eigenvalues greater than 1 were extracted. The first factor accounted for 41.38% of the variance and it included the perceived management commitment to safety in the workplace. The second factor accounted for 14.12% of the variance and it contained the perceived accidents and safety inspections in the workplace. The third factor explained 9.73% of the variance and it included co-workers' commitment to safety in the workplace. Results showed that one item, which seems to belong to the third factor/subscale, loads equally strong to the first and second factor. According to its content, this item was close to the second factor and, consequently, was added to this factor.

A single-item measure was used to assess participants' overall job satisfaction. The measure had five response categories ranging from 1 = *completely dissatisfied* to 5 = *completely satisfied*. This kind of global measure of job satisfaction was extensively used (e.g., Penezić et al. [35]; Veccio 1989, as cited in [34]). According to the given responses, subjects in the study were categorized into three

groups: dissatisfied (if they gave an answer 1 = *completely dissatisfied* or 2 = *very little satisfied*), partially satisfied (if they selected answer 3) and satisfied (if they choose answers 4 = *quite satisfied* or 5 = *completely satisfied*).

On the basis of median age ($Mdn = 45$), respondents were classified in two categories: younger (age < 45) and older (age ≥ 45).

2.3. Data analysis

Three separate two-way analysis of variances (ANOVAs) were applied for data analyzing (one two-way ANOVA for each safety climate dimension as dependent variables and job satisfaction and age as independent variables).

3. Results

Table 1 shows that employees in the construction sector which participated in the study estimated management commitment to work safety on a higher level in comparison to other safety climate dimensions. The mean value of this safety climate dimension ($M = 3.48$; $SD = 1.13$) was above the theoretical mean of the measurement scale which is 3. In other words, respondents noted that safety in the workplace is relatively prioritized by management staff. The mean value of the perceived level of organizations' application of safety mechanisms and safety controls and accident rate, as well, ($M = 3.27$; $SD = 0.77$), was similar to the theoretical mean. Respondents stated that accident rate and safety inspection frequency are moderate. The lowest score was given to co-workers' commitment to work safety ($M = 2.87$; $SD = 1.23$) which is below the theoretical mean score. Namely, participants noted that their co-workers often do not follow safety procedures, i.e., they do not wear prescribed safety equipment because it makes them less efficient especially when job tasks must be completed in a short timeframe. It implies that colleagues ascribe more importance to high work performance than to safety at worksites.

3.1. Two-way ANOVA results

Two-way ANOVA revealed that the interaction effect of job satisfaction and respondents' age on perceived management commitment to safety at work was statistically significant ($F(2, 149) = 4.51$, $p < 0.01$, $\eta^2 = 0.06$). This indicated that the effect of job satisfaction on perceived management commitment to work safety was different among younger and older employees in the construction industry (Figure 1). Additionally, simple effect analysis was used to examine the effect of age on management commitment to work safety perceptions at each level of job satisfaction. It was found that younger respondents who

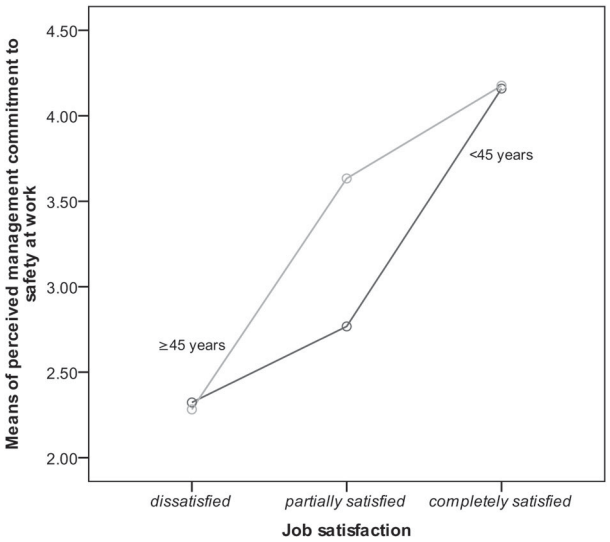

Figure 1. Interaction effect of job satisfaction and age on perceived management commitment to safety at work.

Table 1. Means and standard deviations of perceived safety climate dimensions at different levels of job satisfaction and age.

			Perceived management commitment to work safety		Perceived accident rate and safety inspection		Perceived co-workers' commitment to work safety	
Job satisfaction	Age (years)	*N*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Not satisfied	<45	13	2.32	0.80	2.77	0.63	3.04	1.38
	≥45	17	2.28	0.96	2.80	0.62	2.97	1.29
	Total	30	2.30	0.88	2.79	0.61	3.00	1.31
Partially satisfied	<45	25	2.77	0.88	2.90	0.67	2.82	1.04
	≥45	30	3.63	0.93	3.23	0.82	2.67	1.17
	Total	55	3.24	1.00	3.08	0.76	2.74	1.10
Completely satisfied	<45	29	4.16	0.76	3.63	0.68	3.10	1.38
	≥45	41	4.18	0.81	3.64	0.64	2.82	1.23
	Total	70	4.17	0.78	3.64	0.65	2.92	1.30
Total	<45	67	3.28	1.12	3.19	0.76	2.97	1.25
	≥45	88	3.62	1.12	3.34	0.77	2.80	1.21
	Total	155	3.48	1.13	3.27	0.77	2.87	1.23

were partially satisfied with their job perceived management staff as less committed to work safety compared to older respondents who were partially satisfied with their job ($F(1, 53) = 12.42, p < 0.01$); hypothesis 1, H_1, while respondents from both age groups who were not satisfied with their jobs did not differ in their perceptions of management commitment to safety at work ($F(1, 28) = 0.02$, $p > 0.05$). The same was found with younger and older participants who were completely satisfied with their jobs ($F(1, 68) = 0.001, p > 0.05$).

The effect of age among the respondents with high level of job satisfaction and moderate level of job satisfaction on perceived accident rate and safety inspection frequency, as well as on perceived co-workers' commitment to work safety was not statistically significant ($F(2, 149) = 0.89$, $p > 0.05$ and $F(2, 149) = 0.06$, $p > 0.05$, respectively) (Figures 2 and 3).

Accordingly, H_1 was partially confirmed.

The main effect of job satisfaction was significant for two safety climate dimensions, perceived management commitment to safety in the workplace and perceived accident rate and safety inspection frequency ($F(2, 149) = 52.92$, $p < 0.001$, $\eta^2 = 0.42$ and $F(2, 149) = 19.45$, $p < 0.001$, $\eta^2 = 0.17$, respectively). Participants who were completely satisfied with their jobs stated that management staff provide safe working conditions, that the percentage of accidents is low and that safety inspections are often applied. On the other hand, participants who were not satisfied with their jobs noted that management do not support safety in the workplace, that the accident rate is high and that utilization of work safety rules is rarely examined. *Post hoc* analyses (Scheffe test) revealed that respondents who were completely satisfied with their jobs estimate management commitment to work safety on a higher level in comparison

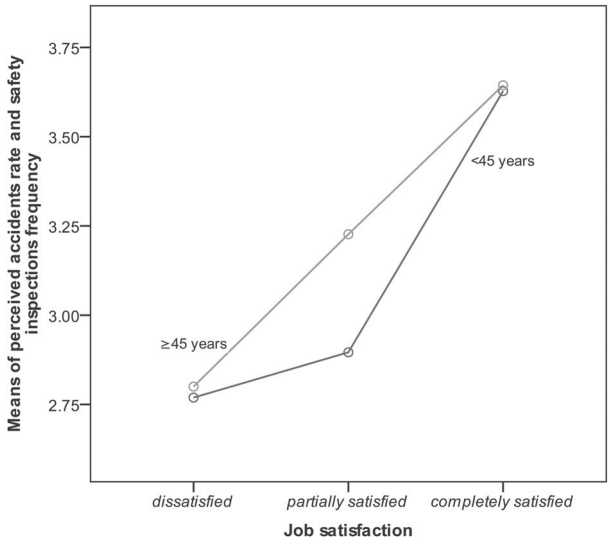

Figure 2. Interaction effect of job satisfaction and age on perceived accident rate and safety inspections.

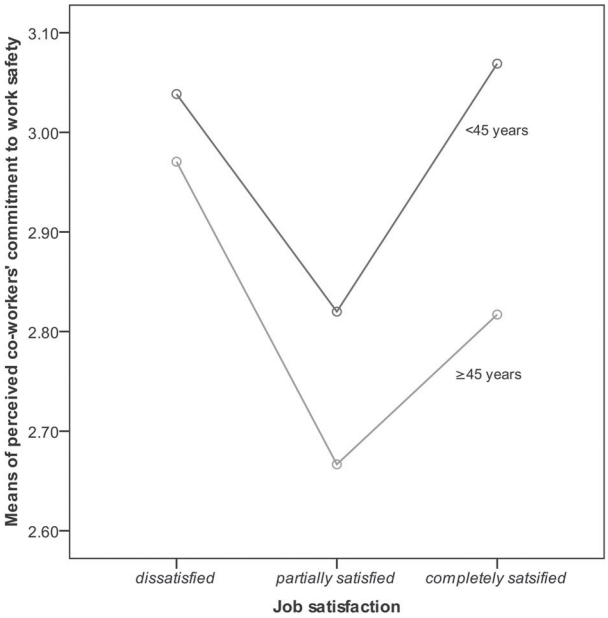

Figure 3. Interaction effect of job satisfaction and age on perceived co-workers' commitment to work safety.

to respondents who were partially satisfied with their jobs ($M = 4.17$ vs. $M = 3.24, p < 0.001$). This group of respondents perceived management staff as more committed to work safety than respondents who were not satisfied with their jobs ($M = 3.24$ vs. $M = 2.30, p < 0.001$). Surveyed employees who were completely satisfied with their jobs have more positive perceptions of accident rate and safety inspection frequency compared to their counterparts who were partially satisfied with their jobs ($M = 3.64$ vs. $M = 3.08$, $p < 0.001$). Employees who showed low and moderate degree of job satisfaction do not differ in their perceptions of accident rate and safety inspection frequency ($M = 3.08$ vs. $M = 2.79, p > 0.05$).

The main effect of job satisfaction on the third safety climate dimension, co-workers' commitment to work safety, was not statistically significant ($F(2, 149) = 0.57$, $p > 0.05$).

The main effect of age on all three safety climate dimensions was not statistically significant ($F(1, 149) = 3.63$, $p > 0.05$, for perceived management commitment to work safety; $F(1, 149) = 1.13, p > 0.05$, for perceived accident rate and safety inspections; $F(1, 149) = 0.54$, $p > 0.05$, for perceived co-workers' commitment to work safety).

4. Discussion

The aim of this study was to explore the role of job satisfaction in perception of safety climate among younger and older employees in the construction industry in the Republic of Macedonia.

The research results show that most of the respondents expressed a high level of job satisfaction. Respondents noted that management staff and organizations as a whole

ascribe relatively higher importance to safety in the workplace than the workers themselves. Taken together, these results show a small deviation from the State Labor Inspectorate's report of safety conditions for 2012 in the construction sector in the Republic of Macedonia. Namely, it was stated that there is non-compliance of health and safety policies by employers, that they failed to implement training for employees and that physical working conditions are inappropriate. Probably, this might be interpreted through Cooper and Phillips' proposition [5] that the link between safety climate perceptions and accidents is not clear. Even more, it implies that there are other factors, such as positive work attitudes, which contribute to work safety perceptions. Namely, safety climate is constructed through the interaction with the technical environment, but also on the basis of affective evaluations of the organization.[15]

Consequently, this study supports the aforementioned. It revealed that job satisfaction has a strong effect on perceived management commitment to safety in the workplace as one of the explored aspects of work safety. These results are consistent with Gyekye's findings.[18]

More important, the conducted analysis showed that age moderates the relationship between management commitment to work safety perceptions and job satisfaction. As follows, older partially job satisfied employees, contrary to younger partially job satisfied employees, perceived management staff as more committed to safety regulations and procedures. Accordingly, the role of age was in the postulated direction. That could be explained through other characteristics among older and younger employees. Namely, older employees compared to their younger colleagues, are more job experienced, have longer tenure and higher organizational commitment, express watchfulness and lower tendency to risky actions. As a result of that, it could be expected that their interpretation of safety issues will be positive, particularly when their job satisfaction is moderate.

Obtained results demonstrated that job satisfaction has a relatively strong effect on perceived accident rate and perceived safety inspection frequency, as another investigated aspect of the safety climate. Respondents who were not satisfied with their job, regardless of their age, stated that the accident rate in the workplace is relatively high and that organizations do not control safety in the workplace regularly. These findings are in line with those of Gyekye,[18] too.

Contrary to Gyekye's report,[18] this research revealed that higher job satisfaction is not related to a more positive perception of safety climate from the aspect of co-workers' behavior. Despite the expressed degree of job satisfaction, participants do not differ in their perception of co-workers' commitment to safety at work. Taken together, these results partially confirmed hypothesis 1.

There are other findings (e.g., [17,19,20]) that offer support to our results. However, in the mentioned studies the relation of job satisfaction with perceptions of safety climate in general, not in its particular aspects, was examined. Support for the obtained results could be also found in Mearns et al.'s suggestion [16] that worksite commitment and other positive attitudes foster perceptions of the organization's priority for safety and health through investment in employees' well-being.

Consequently, the findings of this study might be explained through the connection between job satisfaction and organizational commitment. Namely, more satisfied employees are at the same time more committed to their organization. Therefore, they will have a more positive perception of their organization, management and supervisors, including the importance they put on safe work conditions, providing safety training and equipment. Furthermore, this research demonstrated that when employees partially like their job or when they have no clear attitude toward their work, then age has a significant role in the safety climate perceptions. Probably, because of their higher loyalty to the organization, older employees tend to perceive that management and the organization relatively prioritize safety over other issues in the workplace.

Many authors (e.g., [14,16,18]) proposed that safety climate perceptions are reciprocities of organizational and/or management support to their employees. If perceived safety climate reflects the feelings regarding the organizational support and management obligations,[15] then the results in this study confirmed that social exchange norms refer primarily to the subordinate–management and then to the subordinate–organization relationship. At the same time, the results suggested that colleagues are not included in these reciprocal relations.

This investigation also implies that job satisfaction as affective reaction of one individual toward his/her work, has a reflection on the interpretation of work safety factors on the micro-organizational level in Hofmann et al.'s (1995, as cited in [1]) taxonomy, that is, adherence of management and the organization to safety policies, procedures and practices.

The obtained results interpreted together with the findings referring to the linkage between safety climate perceptions and safety behavior, have an advantage on the conclusion that job satisfaction through its impact on perceived management commitment to work safety and perceived accident rate and safety inspection frequency, could lead to lower percentage of accidents and injuries in the workplace and better health among employees.

Finally, the results which demonstrated that younger and older employees do not differ in their perceptions of investigated safety climate dimensions are in line with the findings reported by Pecquet [32] and Živković.[33] However, this study, as was reported above, suggests that age is important for safety climate perceptions (i.e., its one aspect) among employees who have no clear attitude toward their work in general.

4.1. Implications

On the basis of this study, the conclusion of Gyekye [36] that workers' perceptions of work safety will be more positive by increasing their job satisfaction could be extended among construction workers. Especially, a strong connection between job satisfaction and perceived management commitment to work safety and the role of employees' age as a moderator in this relationship should be emphasized. Hence, job satisfaction contributes not only to a lower level of perceived job strain, better health and higher level of life satisfaction (e.g., [37,38]), but to positive safety climate perceptions, as well.

The motivational approach to work safety pointed out that employees should be motivated to behave safely.[1] Therefore, positive safety climate perceptions, i.e., perceived higher importance of work safety over productivity goals [9] could be a useful tool in motivating workers to follow safety rules. In particular, management, through its supportive behavior, may enhance employees' job satisfaction, which will increase the extent to which employees perceive the safety climate as important issue in their work environment/organization. In addition, this linkage may have a reflection on safety compliance and safety performance.

As was found, management commitment to safety, i.e., their safety attitudes and behavior, is one of the most important factors of safe work behavior among employees/subordinates in the construction industry [39] and among the workforce in power stations,[40] as well. In other words, the safety climate in work environments is characterized by managers who are committed to safety procedures and who support safety among employees (Zohar, 2000, as cited in [16]). In summary, employees' safety climate perceptions could be a valuable feedback for management/organizations in designing regular safety programs.

It is expected that the empirical findings in these investigations will contribute to the promotion of a positive safety climate in the workplace by increasing job satisfaction among construction employees. That, in turn, will lead to higher work motivation, safety behavior and lower financial costs derived from accidents, injuries, medical treatments and absenteeism.

4.2. Limitations

This study has a few limitations. Firstly, its cross-sectional design does not permit to conclude that a causal relationship between investigated variables exists. Secondly, self-reported measures were used which might bring altered and biased responses. An additional limitation is the 1-item assessment of job satisfaction. Another limitation arises from demographic characteristics of the respondents: there are more men than women, participants represent various jobs and have different levels of education.

Notwithstanding the limitations, the conducted research contributed to the extension of the literature on safety climate perceptions, job satisfaction and age with new empirical findings from a developing, non-Western context. Further investigations of the safety climate from a broader perspective (e.g., [41,42]) together with other psychological characteristics of the work environment in the construction industry (e.g., [43]) are needed.

5. Conclusion

This study demonstrated that job satisfaction is strongly related with the main factors in safety climate creation – managers and organizations. More precisely, employees in the construction sector who like their jobs stated that management commitment to safety rules and procedures is high. However, this relation should be considered together with employees' age. More positive perceptions of organizations' engagement in controlling the safety practices during work were shown among employees who are completely satisfied with their jobs. On the other hand, employees with low and moderate level of job satisfaction have negative perceptions of these safety climate dimensions.

Disclosure statement

No potential conflict of interest was reported by the authors.

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